

IN THE DRAWINGS:

Replacement drawing sheets 1 to 14 comprising Figures 1 to 8 in compliance with 37 CFR 1.121(d) are attached. Replacement sheets of drawings contain formal drawings replacing the original informal drawings on file.

The following is attached:

Replacement Drawing Sheets 1 to 14 bearing Figures 1 to 8.

-REMARKS/ARGUMENTS-

Claims 1-3, 5-10, 12-15 and 17-19 remain pending in the present application. Claims 20 to 23 were previously provisionally withdrawn from consideration. Claims 1, 5 to 7, 9, 15 and 17-19 are currently amended and claims 4, 11 and 16 are currently cancelled. No new matter is added by the present amendment.

The original informal drawings on file are replaced by formal drawings. No new matter is added. The formal drawings have a better quality and no substantive changes were made compared to the original drawings.

Objections to the drawings

The drawings are objected to under 37 CFR 1.83(a) since they do not show every feature of the invention specified in the claims.

Claim 15, 17-19 are amended to remove the features not shown in the Figures. Claim 16 is cancelled. The drawings should now conform to 37 CFR 1.83(a).

Rejection of Claims 5-8 and 16-19 under 35 USC §112

Claims 5-8 and 16-19 are rejected under 35 USC §112(2) as being indefinite.

Claim 5 is currently amended to remove the term generally. This amendment is not made for the purpose of patentability and it is believed that the scope of the claim is not altered by the present amendment. Furthermore, claim 5 is also amended to correct antecedent and grammatical errors. It is believed that the rejection of claim 5 for indefiniteness is overcome. Claim 6 is amended for consistency with the language of claim 5.

Regarding Claim 6, it is believed to be clear that Figure 2a shows both cases where the winding set 14b (second winding set) is and is not connected to the commutation circuit

(motor drive) using the dashed line, i.e. optional, connection. The case defined in claim 6 corresponds to the omission of the dashed line connection in Figure 2a.

Claim 7 is currently amended to remove the expression "such that" and to overcome other indefiniteness objections.

Claim 16 is cancelled and its rejection under 112 is therefore moot.

Claim 17 to 19 are currently amended to add the proper antecedent basis for the limitations which objected to.

Rejection of Claims 1-5 and 9-19 under 35 USC §102(b) using *Anderson* (US 5,821,660)

Claims 1-5 and 9-19 are rejected under 35 U.S.C. 102(b) as being anticipated by *Anderson*.

Applicant respectfully submits that *Anderson* anticipates none of amended independent Claims 1, 5, 9 and 15 for the following reasons.

For anticipation under 35 U.S.C. § 102, the reference "must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." (MPEP §706.02). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Office Action states that *Anderson* describes "a stator (14) having at least a first and second multiphase winding". From Fig. 2 and col. 4, lines 1-12 of Andersen, it is understood that "a first multiphase winding" where 30A, 30B, and 30C would be the multiple phases of winding 30, and that "a second multiphase winding" where 32A, 32B, and 32C would be the multiple phases of winding 32. This is confirmed by *Anderson* which goes on to say that "stator windings 14 are organized in three phases 19A, 19B,

19C". The Office Action also states that "the drive circuit [is] connected to at least [the] first winding (15A) to drive the rotor (18)" and then "a rotor position detector (fig. 4:96, resolver) connected to the second winding (15B)". These last two statements purport that the first multiphase winding would be 30A, 32A, etc. (connected to 15A) and that the second multiphase winding would be 30B, 32B, etc. (connected to 15B). This directly contradicts the fact that *Anderson's* first multiple phase winding is 30A, 30B, and 30C, and its second multiple phase winding is 32A, 32B, and 32C. The Office Action therefore incorrectly interprets *Anderson* to read on Claims 1, 5, 9, and 15. For this reason alone, *Anderson* does not teach all elements of Claims 1, 5, 9, and 15 and hence does not anticipate it.

Furthermore, *Anderson* clearly shows in Figs. 2A-2D that, when the windings are not connected to phases A, B, and C, they are not used and hence do not constitute an electrically isolated second multiphase winding in which power can be induced and measured. For example, in Fig. 2A, the first multiphase winding is connected to phases A, B, and C, while the others are not connected at all. In Fig. 2D, all windings are connected to each other and thus are not electrically isolated. For this reason as well, *Anderson* does not teach all elements of Claims 1, 5, 9, and 15 and hence does not anticipate it.

Applicants respectfully submit that *Anderson* anticipates none of Claims 1, 5, 9 and 15 because it does not teach every aspect of the claimed invention either explicitly or impliedly. Claims 2-3 are dependent on claim 1 and thus are also novel and non-obvious. Claim 6 is dependent on claim 5 and thus is also novel and non-obvious. Claims 10 and 12-14 are dependent on claim 9 and thus are also novel and non-obvious. Claims 17-19 are dependent on claim 15 and thus are also novel and non-obvious. Withdrawal of the rejection to Claims 1-5, 9-19 is respectfully requested. Claims 4, 11 and 16 are cancelled.

Rejection of Claims 1, 5, 9 and 15-19 under 35 USC §102(b) using *Muller* (US 4,322,666)

Claims 1, 5, 9 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by *Muller*.

Applicant respectfully submits that *Muller* anticipates none of amended independent Claims 1, 5, 9 and 15 for the following reasons.

Muller teaches a permanent magnet motor using a Hall generator 53 installed on the stator, to provide a specific commutation pattern so as to obtain a smooth torque output.

Muller simply does not teach a first and a second multiphase winding installed on a stator. Items 47, 48 and 49, 50 of *Muller* are different magnetically active portions or stator coils 19 and 20 respectively. Items 47, 48 and 49, 50 do not constitute a first and a second multiphase winding.

Applicants respectfully submit that *Muller* anticipates none of Claim 1, 5, 9 and 15-19 because it does not teach every aspect of the claimed invention either explicitly or impliedly. Withdrawal of the rejection to Claims 1, 5, 9 and 15-19 is respectfully requested.

Rejection of Claims 1, 3-5, 7, 9, 15-18 under 35 USC §102(b) using *Vu* (US 5,838,122)

Claims 1, 3-5, 7, 9, 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by *Vu*.

Applicant respectfully submits that *Vu* anticipates none of amended independent Claims 1, 5, 7 and 9 for the following reasons. Independent Claim 15 is cancelled.

Vu teaches a method for aligning the phase of a brushless direct current motor which uses a torque coils 38' and sensor coils 38. Each tooth of the stator has one torque coil

38' and one sensor coil 38. The torque 38' and sensor coils 38 thereby overlap on the stator and both occupy all teeth of the stator. Both torque 38' and stator coils 38 interact with the permanent magnets of the same rotor.

Regarding claims 1 and 7, *Vu* does not teach a first and a second multiphase winding sets installed on a same stator such that they do not overlap one another.

Regarding claims 5, 9, and 15 *Vu* does not teach a first and a second multiphase winding set installed on a same stator such that they occupy non-overlapping segments or distinct sectors of the stator.

Applicants respectfully submit that *Vu* anticipates none of Claim 1, 5, 7, 9, and 15 because it does not teach every aspect of the claimed invention either explicitly or impliedly. Claim 3 is dependent on claim 1 and thus is also novel and non-obvious. Claims 4 and 16 are cancelled. Withdrawal of the rejection of Claims 1, 3-5, 7, 9, and 15-18 is respectfully requested.

Rejection of Claim 7 under 35 USC §102(b) using *Pengov* (US 6,060,809)

Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by *Pengov*.

Applicant respectfully submits that *Pengov* does not anticipate amended independent Claim 7 for the following reasons.

Pengov teaches a switched reluctance machine where only one winding set comprising phase A and B is shown. *Pengov* does not teach a first and a second multiphase winding set installed on a same stator such that they do no overlap one another and interacting with a same rotor such that the first winding is used to rotationally drive the rotor and the second is used in conjunction with the rotor position recognition circuit to determine the position of the rotor.

Applicants respectfully submit that *Pengov* does not anticipate Claim 7 because it does not teach every aspect of the claimed invention either explicitly or impliedly. Withdrawal of the rejection to Claim 7 is respectfully requested.

Rejection of Claim 6 under 35 USC §103(a) using *Anderson* in view of *Bartholow et al.* (US 5,221,880), *Vu* in view of *Bartholow et al.* or *Muller* in view of *Bartholow et al.*

Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over *Anderson* in view of *Bartholow et al.*

Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over *Vu* in view of *Bartholow et al.*

Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over *Muller* in view of *Bartholow et al.*

Applicant respectfully submits that claim 6 is not obvious over *Anderson* in view of *Bartholow et al.*, *Vu* in view of *Bartholow et al.*, or *Muller* in view of *Bartholow et al.*, for the following reasons. Claim 6 is dependent on claim 5 which is novel and non-obvious and is thus also novel and non-obvious. Withdrawal of the rejection of Claim 6 is respectfully requested.

Rejection of Claim 8 under 35 USC §103(a) using *Pengov*

Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over *Pengov*.

Applicant respectfully submits that claim 8 is not obvious over *Pengov*, for the following reasons. Claim 8 is dependent on claim 7 which is novel and non-obvious and is thus also novel and non-obvious. Withdrawal of the rejection to Claim 8 is respectfully requested.

In view of the foregoing, reconsideration of the rejections and objections of claims 1 to 9 and 12 to 14 is respectfully requested. It is believed that claims 1 to 9 and 12 to 14 are allowable over the prior art, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,
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Ends: - Replacement Drawing Sheets 1 to 14 bearing Figures 1 to 8